Jeffrey C. Brooks
1027 Cayman Drive
Meridian, ID 83642
(208) 867-9062

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INTRODUCTION

My name is Jeff Brooks. I am a ratepayer, customer, and former employee of Idaho Power Company, and Southern California Edison Company with over 20 years DSM and Marketing experience in both the electric natural gas utility industries. I hold an engineering degree with environmental emphasis from the California State Polytechnic University at Pomona, and I am certified by the California Energy Commission in Residential and Commercial/Industrial Energy Management as well as Renewable Energy Technologies.

Additionally, I provide independent professional consulting services through my company, Advanced Energy Strategies, Inc., and provide my comments here on behalf of the Idaho Rural Council .

DISCUSSION

To have a meaningful and useful Integrated Resource Plan (IRP) that fully and objectively evaluates all competing electric energy resources, one must have reliable and insightful research information that pertains directly to the geographical area requiring the energy. The IRP must look at all potential electrical resources with and analyze and evaluate them objectively without pre-prejudice either for or against particular resources. The research and analysis of each potential resource provides the foundation for proper due diligence in selecting the appropriate mix of resource alternatives.

If the research that forms the foundation for a truly Integrated Resource Plan is flawed, incomplete, or lacking, then any conclusions reached by that IRP is likewise flawed—garbage in, garbage out. In the case of Idaho Power Company's 2002 IRP, there is an absence of basic customer load research information from which to draw any conclusions—or to even allow educated speculation—about the magnitude and characteristics of native customer load segments. There is no quantitative or qualitative information to characterize those periods of coincident peak demand that would allow analysts to determine appropriate or potentially effective opportunities and strategies for either DSM or distributed generation.

For instance, what percent of the peak coincident demand do various customer groups contribute (residential, small commercial, large commercial/industrial, etc)? Within each customer group what type of equipment operation predominates in creating their portion of the peak coincident demand? These are basic and essential foundational questions that must be answered in order to fairly and objectively evaluate the magnitude and availability of any potential DSM resources. Idaho Power's 2002 IRP does not contain any customer load research information, provides no such analysis, and reaches no conclusion about the magnitude or availability of DSM within Idaho. This lack of basic customer research automatically slants any outcome of the IRP process—from the beginning to the end—towards consideration and selection of supply-side resource options only, and ignores the huge potential that exists for energy savings and demand shifting strategies on the demand-side of the energy supply equation

In Idaho Power's motion to defer the Garnet power plant proceedings during oral arguments this July, Idaho Power offered to prepare a study of energy resource alternatives—

within 90 days—to present to the Commission. In its order dismissing the Garnet preceding the Commission ordered Idaho Power to prepare and present a report of energy resource alternatives to the Commission within 90 days. By offering to produce an energy resource report has not Idaho Power tacitly admitted that its 2002 Integrated Resource Plan—the basis for the Garnet proposal and the long term strategy for meeting the company's resource needs—is inadequate and unsound, such that a new report must be undertaken?

My impression of the 2002 IRP was that while it at-first appears somewhat comprehensive, it does not attempt to understand or characterize any resource alternatives other than the Garnet Facility with any degree of rigor. When analyzed critically the 2002 IRP reads as a resource plan justification rather than as a truly integrated resource plan. The effort applied to researching supply-side and demand-side possibilities lacks depth, insight, and analysis such that the scant information that is provided in the 2002 IRP is useless for charting our energy future in an integrated fashion.

The 2002 IRP does not provide any load research to characterize either the types of customer equipment, or the customer groups, that are responsible for creating the so-called Load Forecast, or the "coincident-load energy-deficient periods." Second, quoting from the 2002 IRP, "the *Sales and Load Forecast* are compared throughout the planning period against the generating capacity of Idaho Power's power supply system (exhibit No. 7 pg.2 paragraph 1, Resource Adequacy). This statement is not indicative of an integrated plan, but rather of a generation capacity plan. No specific DSM targets are identified other than the bland assertion that Idaho Power will increase the efficiency its own facilities.

Further, the 2002 IRP does not identify or discuss potential third party generation proposals such as the one proposed by Mountain States Power, Inc. to construct a power plant in Mountain Home, of up to 527 MW.

The 2002 IRP (exhibit No. 7 pg 4 Near-term Action Plan) states "Customer growth is the primary driving force behind Idaho Power's need for additional resources. Population growth throughout Southern Idaho and specifically in the Treasure Valley requires additional measures to meet both peak and electrical energy needs." This is a rather self-evident assertion that offers no particular insight of value; the same can be said of nearly every region of the nation. Instead of lame blather, a comprehensive energy plan, whether called an IRP or "Special Report," should contain insightful and actionable information about both supply-side and demand–side energy opportunities, and weave them into an integrated well-considered, multi-faceted energy plan.

Effective Load Research should provide quantitative and qualitative (not just number crunching) insight about the proportion and magnitude of customer loads—from each of the various customer groups—and identify equipment load types within each group which lead to the creation of energy deficient periods, to determine what DSM, rate design, or supply-side actions may provide benefit. Further, insightful Load Research would also identify and quantify potential discretionary loads available from large energy use customers—whether one large facility or chain operations with many scattered sites.

Additionally, There are many factors that impinge upon a customer's decision about whether to pursue energy saving or demand shifting technologies. However, the primary driving factor behind all business decisions is money; either cost savings or revenue enhancement. Idaho Power does not have a rate framework designed to promote energy savings or load shifting. An appropriate rate structure would send appropriate pricing signals to customers that would drive the economics of DSM to provide a partial resource solution. At present Idaho Power's commercial and industrial rates have a demand component and an energy component, but not time-of-use demand or energy components. For instance, if medium and large customers took electric service under a Time-of-Use tariff that imposed high on-peak demand and energy charges and very low off-peak demand and energy charges, then there would be an economic mechanism to support customer adoption of DSM or load management options

If a comprehensive Time-of-Use rate structure were put in place we could reasonably expect commercial and industrial customers to implement operational and process changes designed to lessen the cost of energy in their enterprises, thereby increasing their efficiency, productivity and profitability—while simultaneously providing a demand-side energy and demand resource. Perhaps Idaho Power could provide some leadership regarding demand limiting or energy saving technology activities within their customer groups to encourage actual energy savings and demand shifting within the customers of Idaho. Alternately, perhaps Idaho Power could contract with local energy experts to deliver DSM to their customers.

There are many strategies and methods for reducing coincident peak electricity demand and saving energy, or eliminating waste. Without appropriate customer load research to guide us we can only speculate as to what strategies may offer benefit for our State, however, we have learned from the aggressive demand-side activities of other electric utilities that some technologies may offer useful results in our case. These include but are not limited to the following.

Daylighting: where naturally occurring daylight is used to displace artificial electrical lighting. Daylighting opportunities naturally coincide with summer peak load conditions and not only reduce lighting loads, but also reduce air conditioning loads due to the heat generated by lighting fixtures that must be offset by a building's cooling system, so there is a double effect in many cases. In commercial office buildings this would take the form of architectural building features that reflect and distribute daylight deep into the interior space so that perimeter lighting systems can be controlled and automatically turned off when sufficient daylight is available. This approach is applicable to office buildings, commercial structures such as big box stores and grocery stores as well as warehouse facilities or any situation where naturally occurring daylight is reasonably available for indoor illumination.

Air Conditioner Cycling: In this strategy residential and commercial customers are offered a reduction on their power bills related to both the size of the equipment controlled and the cycling strategy opted for, if they agreed to allow the installation of cycling retrofit equipment to be added to their air conditioners which could remotely be activated to turn off the cooling systems. If 5000 customer air-conditioning units were controlled in this manner and each air conditioner were, for instance, average sized 4-ton cooling units, then the Company could shed (5000 x 4 tons ea. x 1.4 kW/ton =) **28 MW** of peak energy demand when needed. If 20,000 AC units were controlled in this manner then **112 MW** of load shedding could be achieved during the "few hours" of energy deficiency that occurs annually under the 2002 IRP load forecast scenario.

Thermal Storage: Thermal Energy Storage is where large central (chilled water) cooling systems for commercial buildings are replaced by TES systems to shift energy usage and demand from on-peak to off-peak times. There are several different TES technologies available, but in general, a storage tank combined with ice harvesters are installed to replace the traditional chilled-water cooling systems to meet the cooling requirements of large commercial buildings. At night, during periods of low electricity demand, the ice harvesters operate and fill the storage tanks with a mixture of ice and water. The following day, when the building requires cooling, the 33-degree stored ice/water mixture is circulated through the chilled water piping system to cool the building without operating the chiller compressors during peak hours, as would normally be the case. TES systems of this type are currently in operation throughout California and the rest of the country. This is a technology that was first employed in 1934 when the very first TES system was installed to provide cooling at a movie theater in Texas.

Industrial Process Efficiency Improvements: This is very site (customer process) specific but has the potential to yield huge energy savings as well as significant benefits from increased productivity and product quality along with environmental benefits from reduced air and water emissions. In Idaho there are many food processing, high-tech, and other industrial facilities that can improve the performance of their processes, if they are nudged into action by a motivated, knowledgeable and innovative DSM partner, and are supported by appropriate energy and demand price signals that foster implementation of such changes.

Distributed Generation: There are many commercial and industrial facilities in Idaho that cannot afford to endure power outages or voltage spikes and dips. For instance, Micron and Zilog, as well as many other facilities with microprocessor-controlled process, often use very large (1 MW or larger) power conditioning devices to insure that their production processes are not interrupted by voltage fluctuations. Certain types of these power-conditioning units can also be packaged with flywheel devices and secondary fuel drivers to allow seamless separation from the utility grid and continued operation, independent of the electric grid. Idaho Power could easily partner with these customers to install these systems for mutual benefit, to provide remotely dispatched distributed generation to free up considerable blocks of power in times of critical need. Because both the facility operators and Idaho Power need the flexible reliability these systems offer, it is possible to gain a double benefit for both parties through knowledgeable application of available technologies, and a sharing of costs and benefits.

There are situations where customer-owned back-up generators could be employed to provide on-demand load shedding capability, if it were desired. Almost all large grocery, retail, and other commercial facilities have back-up generators installed both for safety reasons as well as to preserve the integrity of their computerized equipment. These resources could be harnessed and coordinated by a proactive DSM effort that would provide benefits both to the equipment owners (by receiving increased duty and benefit from largely idle equipment) and to the general rate paying public by coordinated utilization of these potential resources to meet short duration, rarely-occurring power shortages such as are predicted by Idaho Power's IRP. The magnitude of this potential resource is open to debate, but I believe it would be prudent for a responsible electric utility that has determined it has a potential for short-duration low-frequency-ofoccurrence power shortages to, at a minimum, catalog the magnitude and locations of the potential resources that exist. (To me this strategy has much greater appeal than that of placing diesel-fired generators in residential neighborhoods. And I believe most of our corporate citizens would be glad to employ their stand-by equipment to provide a community service of this nature, if they were asked to do so.)

Irrigation Scheduling and Pump Tests: Irrigation scheduling is similar to AC Cycling except that there is not a reduction in irrigated acreage or in the volume of water placed on the crops. Rather, the notion here is that if the irrigation pumps were controlled in a manner similar to that used in AC Cycling, then equipment operating hours could be scheduled to reduce coincident demand, so as not to run simultaneously, but in rotating blocks.

Irrigation Pump Tests are employed to characterize the operation of irrigation pumping systems, and the data gathered from the pump test allows for the optimization of turbine pump efficiency. Pump tests were the primary vehicle to identify and quantify energy improvements obtained in Idaho Power's Agricultural Choices program during the 1990's. Southern California Edison has provided a pump-test program for its agricultural customers continuously since the early part of the century, through to this day, because of the value it offers to both irrigation customers and the utility.

CONCLUSION

Idaho Power Company has historically demonstrated a wariness of Demand Side Management and, like some, viewed DSM and conservation activities as counterintuitive to traditional electric utility operations. It is well past the time when Idaho Power can afford to ignore DSM and strategically coordinated rate design options as viable opportunities to mitigate our region's growing energy needs. In summary I am suspect of Idaho Power's IRP's as they appear to game the system in order to elevate preferred business plan options over more intuitively logical long term strategies.

I find Idaho Power's 2002 IRP unsatisfactory and deficient. It is cursory in nature, incomplete, and useless as a long-term planning tool. I therefore urge the Commission to reject the 2002 IRP and direct Idaho Power to complete both an up-to-date and comprehensive Customer Load Research Report and Analysis that then provides an appropriate foundational basis for a new version of the 2002 IRP that fully examines rate design options and customer loads, and demand-side opportunities in conjunction with supply-side alternatives.

Moreover, I anticipate reviewing the newly proposed and ordered report that Idaho Power offered to the Commission during oral arguments on dismissal of the Garnet proceedings.

I expect that the ultimate solution to Idaho's energy situation will in fact be a set of several solutions that include supply-side, demand-side, and rate design options working in an integrated plan to achieve our long-term energy needs. One just need be cognizant that in order to procure reliable DSM resources a long-term presence in the market is necessary, so that when equipment replacement opportunities arise within Idaho Power's customer base, those opportunities are leveraged in a positive manner and do not become just another lost opportunity that further exacerbates our energy situation.